

Remarks

Claims 7-17 were pending in this application prior to this response. Claims 14, 16 and 17 are allowed. The remaining claims were rejected. Claims 1-6, 15, and 18-23 have been cancelled. The applicants request reconsideration of all remaining rejected claims.

I. Rejection of Claims 7-13 Under 35 U.S.C. §112, First Paragraph

Claims 7-13 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement.

Claims 7 and 13 include the limitation relating to exposures occurring at a "preselected phase" which, according to the office action, is not supported by the specification.

The applicants respectfully disagree with the office action. The original claim 7 used terms "synchronized with the frequency" and "synchronized frequency" in two elements as set forth below:

taking a first exposure with a lens in a first position, the first exposure synchronized with the frequency of intensity variations in the scene

taking a second exposure at the synchronized frequency.

The applicants simply changed the "synchronized with the frequency" and "synchronized frequency" terms to "preselected phase" which refers to the starting point of image capture. Phase tends to be better understood in the art than "synchronized with the frequency" and "synchronized frequency". The applicants contend that the terms are interchangeable and, thus, the "preselected phase" term is disclosed in the

specification in the manner that "synchronized with the frequency" and "synchronized frequency" are disclosed.

Furthermore, support for the "preselected frequency" term is provided in paragraphs 31 and 39 of the specification (printed publication), which are printed as follows for convenience:

[0031] Another way to determine the frequency is to adjust the start of each of the exposures to be synchronized in phase with one of the common AC frequencies and then recording the brightness for a number of exposures. This process is repeated with other common frequencies until the variability of the average light intensity between exposures is found to be smaller at one frequency than the other. The reduced variability occurs because the average intensity of each sample will be approximately the same when each exposure starts at the same place on the waveform. Once the frequency has been determined the phase can be determined by moving the starting exposure time along the period of the waveform while looking for minimum or maximum brightness levels in the measured light.

(Emphasis added)

[0039] In one embodiment the exposure lengths used in the auto-focus calculations are kept constant. The exposures are synchronized with the frequency of the intensity variations in the scene. The exposures can be synchronized at the same frequency, an integer multiple of the frequency, or an integer divisor of the frequency of the intensity variations. For example, when the intensity variations have a frequency of 120 Hz, the exposures used in the auto-focus calculations can be synchronized at 120 Hz, 240 Hz or 60 Hz. These are just three of the many potential frequencies that could be used for synchronization in this example. The starting place or phase on the intensity variation is unimportant. The exposure length is also unimportant. Because each exposure starts at the same place or phase of the intensity variations and the exposures are the same length there will be little variation in intensity between exposures. Therefore the best focus measure will correspond to the best focus of the lens.

(Emphasis added)

Based on the foregoing, the phase is a "place" of the intensity variations. The applicants contend that the specification discloses such terms. In the alternative, the applicants contend that a "preselected phase" is very well-known in the art. One of the

building blocks for understanding AC signals is phase. Therefore, a predetermined phase is well-known by one skilled in the art.

Because the term "predetermined phase" is described in the specification and well-known to ones skilled in the art, the applicants contend that the rejection of claim 1 and its dependent claims have been overcome.

The applicants contend that the same rebuttals apply to the rejection of claim 13. Accordingly, claims 7, the claims depending therefrom, and claim 13 are deemed allowable.

In view of the above, all of the pending claims are now believed to be in condition for allowance and a notice to that effect is earnestly solicited.

Respectfully submitted,
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